

CLAIMS**We claim:**

1. A computer-readable medium having computer-executable instructions for performing the steps of:
- commanding the object to set a first data type on an input of the object;
 - commanding the object to set a second data type on an output of the object;
 - commanding the object to process data of the first type received at the input of the object; and
 - commanding the object to generate output data of the second type at the output of the object.
2. The computer-readable medium of claim 1 having further computer-executable instructions for performing the steps of:
- detecting when an incomplete status flag is set; and
 - re-commanding the object to generate output data on the output of the object if the incomplete status flag is set.
3. The computer-readable medium of claim 2 wherein the step of re-commanding the object to generate output data on the output of the object further comprises repeating the step of re-commanding the object to generate output data for as long as the incomplete status flag is set.

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detecting the presence of an incomplete status flag; and

if the incomplete status flag is set, waiting for the incomplete status flag to reset before performing the step of commanding the object to process data of the first type received at the input of the object.

5 8. The computer-readable medium of claim 1 having further computer-executable instructions for performing the step of querying the object for a minimum input buffer size required to guarantee that some data is processed when the object is commanded to process data of the first type.

10 9. The computer-readable medium of claim 1 having further computer-executable instructions for performing the step of querying the object for a minimum output buffer size required to guarantee that some data is output when the object is commanded to generate output data .

15 10. The computer-readable medium of claim 1 having further computer-executable instructions for performing the steps of:

determining an first data type that the object can process on the input; and

determining a second data type that the object can support on the output.

20 11. The computer-readable medium of claim 1 having further computer-executable instructions for performing the step of informing the object that the data is discontinuous on the input of the object.

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determining a first data type that the object can process on the input;
determining a second data type that the object can support on the output;
querying the object for a minimum input buffer size required to guarantee that
some data is processed when the object is commanded to process input data;
detecting when an incomplete status flag is set;
re-commanding the object to generate output data on the output of the object if the
incomplete status flag is set; and
if the incomplete status flag is set, waiting for the incomplete status flag to reset
before performing the step of commanding the object to process data on the input of the
object.

13. The computer-readable medium of claim 12 having further computer-executable instructions for performing the step of informing the object that data is discontinuous on the input of the object.

14. The computer-readable medium of claim 1 wherein the step of commanding the object to generate output data on the output of the object further comprises the step of detecting that an output flag has been set to indicate that the output data can be generated prior to commanding the object to generate output data on the output of the object.

15. A computer-readable medium having computer-executable instructions for performing the steps of:

setting input and output data types for a respective input and output of an object in response to at least one command from an application;

5 processing input data on the input of the object in response to a command from the application to process data on the input; and

generating output data on the output of the object in response to a command from the application to generate data on the output.

10 16. The computer-readable medium of claim 15 wherein the step of setting the input and output data types comprises the step of setting the input data type to a streaming media input type and of setting the output data type to a streaming media output type.

15 17. The computer-readable medium of claim 16 wherein the step of setting the streaming media input type comprises the step of setting the streaming media input type to a streaming audio input media type and the step of setting the streaming media output type comprises the step of setting the streaming media output type to a streaming audio output media type.

20 18. The computer-readable medium of claim 16 wherein the step of setting the streaming media input type comprises the step of setting the streaming media input type to an input streaming video media type and the step of setting the streaming media output

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type comprises the step of setting the streaming media output type to an output streaming video media type.

19. The computer-readable medium of claim 15 having further computer-executable instructions for performing the step of setting an incomplete status flag upon receiving a command from the application to generate output data if all output data for the associated input data cannot be generated.

20. The computer-readable medium of claim 19 having further computer-executable instructions for performing the step of resetting the incomplete status flag upon generating all output data for the associated input data.

21. The computer-readable medium of claim 19 having further computer-executable instructions for performing the steps of buffering input data internally when there is insufficient input data to generate output data.

22. The computer-readable medium of claim 15 having further computer-executable instructions for performing the step of providing an indication that the output data can be generated.

23. The computer-readable medium of claim 15 having further computer-executable instructions for performing the step of enumerating types of data that are supported in response to a query from the application.

24. The computer-readable medium of claim 15 having further computer-executable instructions for performing the step of generating all data that can be processed in response to notice from the application that data is discontinuous on the input.

25. The computer-readable medium of claim 15 having further computer-executable instructions for performing the step of setting a buffer flag in response to a query to provide information about an input data stream, the buffer flag indicating that a plurality of input buffers may be held.

26. The computer-readable medium of claim 25 having further computer-executable instructions for performing the steps of:

setting a lookahead value, the lookahead value indicating a maximum size of data held by the object; and
providing the lookahead value to the application in response to a command from the application to provide buffer size requirements for the input data stream.

27. The computer-readable medium of claim 26 wherein the application has a fixed buffer size, the computer-readable medium having further computer-executable instructions for performing the the step of allocating a number of buffers for processing data, defined by

$$number \geq \frac{(\max imumdatasize + 2 * (fixedbuffersize - 1))}{fixedbuffersize}$$

29. The computer-readable medium of claim 28 wherein the step of registering an existence with an operating system comprises:

identifying a category;

identifying a number of input data types to register;

identifying a number of output data types to register; and

30. A method of configuring and controlling an object for processing data, the method comprising the steps of:

issuing from a process one or more commands to set a data type at each of a data input and a data output of the object;

setting the data type for each of the data input and data output of the object in response to the command;

processing data presented to the input of the object in response to a command from the application to begin processing data; and

31. The method of claim 31 further comprising the steps of:
issuing an incomplete status flag if the object is unable to generate all the output data for associated input data; and
reissuing from the process a command to generate output data upon receiving the incomplete status flag.

33. The method of claim 30 further comprising the step of issuing an indication that the object can generate output data.

34. The method of claim 30 further comprising the steps of:
issuing from the process a data type query for the types of data the object supports; and
enumerating the types of data supported in response to the data type query.

35. The method of claim 30 further comprising the steps of:
issuing from the process an input discontinuity notice; and

generating all data that can be processed in response to the input discontinuity notice.

36. The method of claim 30 further comprising the steps of:

5 issuing from the process an information query to provide information about an input stream; and

setting a buffer flag indicating that a plurality of input buffers may be held in response to the information query.

10 37. The method of claim 36 further comprising the steps of:

issuing from the process a buffer size requirement command; and

setting and issuing a lookahead value in response to the buffer size requirement command, the lookahead value indicating a maximum size of data held by the object.

15 38. An interface for enabling applications to control modules for processing streaming media data, the interface comprising: a first command to set an input data format of the processing module; a second command to set an output data format of the processing module; a third command to process data on an input of the processing module; and a fourth command to generate data on an output of the processing module.

20 39. The interface of claim 38 further comprising a fifth command to enumerate the capabilities of a processing module by at least one of a category and a media type.

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40. The interface of claim 38 further comprising: a sixth command to determine a minimum input buffer size of a processing module required to guarantee that data is processed; and a seventh command to determine a minimum output buffer size of a processing module required to guarantee that data is generated.

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41. The interface of claim 38 further comprising: an eighth command to determine the input data types that a processing module can process; and a ninth command to determine the output data types that a processing module can generate.

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42. The interface of claim 38 further comprising: a fifth command to enumerate the capabilities of a processing module by at least one of a category and a media type; a sixth command to determine a minimum input buffer size of a processing module required to guarantee that data is processed; a seventh command to determine a minimum output buffer size of a processing module required to guarantee that data is generated; an eighth command to determine the input data types that a processing module can process; and a ninth command to determine the output data types that a processing module can generate.

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